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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,870	08/22/2003	Narendra Digamber Joshi	129969	1869

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EXAMINER	
GIBSON, ERIC M	
ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/604,870	JOSHI ET AL.	
	Examiner	Art Unit	
	Eric M. Gibson	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-29* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-10, 12, 14-17 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US004280185A) and Muehl et al. (US20040024501A1) in view of Katayanagi et al. (US006321983B1).

a. Per claim 1, Martin teaches an apparatus for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including at least one information storage device permanently deployed on at least one individual component (64, figure 1), identification information about the engine component (30-35, figure 1), at least one data register having data storage capabilities referenced by stored identification information of at least one part and a parameter (column 8, lines 17-21), wherein the information storage

device is accessible for retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

b. The combination of Martin and Muehl does not teach storing information on individual parts of the components making up the turbine engine. However, storing more data or detailed information on individual parts of a larger component would have been obvious to one of ordinary skill in the art at the time of the invention. The combination of Martin and Muehl identify that storing information on the components is beneficial to track the components and store maintenance and repair histories. The

same reasoning also applies to why it would have been desirable for one of ordinary skill in the art at the time of the invention to modify the system to include more detailed information on the part level, rather than just the component. In part, advances in technology, such as the development of smart cards and RFID tags have made the storage of data easier, while the capacity of such devices has increased greatly. These advances, along with the obvious desire to store information regarding maintenance and repairs, would have been obvious to one of ordinary skill in the art at the time of the invention. Katayanagi teaches a general method for managing life cycles of replaceable products that reflects both the advances in technology and the requisite desire to store individual part information associated with components (see generally, column 10, lines 17-52). It would have been obvious to one of ordinary skill in the art, at the time of invention, to store information on individual parts of the components making up the turbine engine in the system taught by the combination, as more detailed information is both desirable and made easier by advances in technology, as evidenced in an example by Katayanagi.

c. Per claim 2, Martin teaches that the information is updated by an engine control system (column 4, lines 8-13).

d. Per claim 3, Martin teaches periodically storing the data (column 2, lines 10-15).

e. Per claim 4, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).

f. Per claim 5, Martin teaches adding to the storage device (column 8, lines 17-18).

g. Per claim 6, Martin teaches storing information over the life of the component (column 8, lines 17-21).

h. Per claim 7, Martin teaches storing the information permanently (column 8, lines 17-21).

i. Per claim 8, Martin teaches storing information over the life of the component (column 8, lines 17-21).

j. Per claims 9 and 10, Martin teaches that the LTU can be mounted on the engine (column 3, lines 45-46).

k. Per claim 12, Martin teaches anti-tampering measures (column 8, lines 30-32).

l. Per claim 14, Martin teaches that the information storage device can be mounted on the engine (column 3, lines 45-46).

m. Per claim 15, Martin teaches that the information storage device can be mounted off the engine (column 3, lines 45-46).

n. Per claims 16 and 17, Martin teaches that the storage device can be located off the engine (column 3, lines 45-46).

o. Per claim 19, Martin teaches that the storage device can be queried by an outside unit (column 4, lines 40-42), where the data can be used by people to ensure that contractual obligations are met.

p. Per claim 20, Martin teaches an apparatus for electronically recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including at least one information storage device permanently deployed on at least one individual component (64, figure 1), identification information of at least one life limited part of the engine component (30-35, figure 1), at least one data register having data storage capabilities for life limited parts referenced by stored identification information of at least one life limited part and a parameter (column 8, lines 17-21), wherein the information storage device is accessible for retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger

component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

q. The combination of Martin and Muehl does not teach storing information on individual parts of the components making up the turbine engine. However, storing more data or detailed information on individual parts of a larger component would have been obvious to one of ordinary skill in the art at the time of the invention. The combination of Martin and Muehl identify that storing information on the components is beneficial to track the components and store maintenance and repair histories. The same reasoning also applies to why it would have been desirable for one of ordinary skill in the art at the time of the invention to modify the system to include more detailed information on the part level, rather than just the component. In part, advances in technology, such as the development of smart cards and RFID tags have made the storage of data easier, while the capacity of such devices has increased greatly. These advances, along with the obvious desire to store information regarding maintenance and repairs, would have been obvious to one of ordinary skill in the art at the time of the invention. Katayanagi teaches a general method for managing life cycles of replaceable products that reflects both the advances in technology and the requisite desire to store individual part information associated with components (see generally, column 10, lines 17-52). It would have been obvious to one of ordinary skill in the art, at the time of invention, to store information on individual parts of the components making up the turbine engine in the system taught by the combination, as more detailed information is

both desirable and made easier by advances in technology, as evidenced in an example by Katayanagi.

r. Per claim 21, Martin teaches storing the information permanently (column 8, lines 17-21).

s. Per claim 22, Martin teaches periodically storing the data (column 2, lines 10-15).

t. Per claim 23, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).

u. Per claim 24, Martin teaches a method for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including providing at least one information storage device permanently deployed on at least one individual component (64, figure 1), storing identification information about at least one part of the engine component (30-35, figure 1), providing at least one data register having data storage capabilities and referencing each data register with stored identification information of at least one part and a parameter (column 8, lines 17-21), and retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related

reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]) and that the data register is upgradeable (page 4-5, [0049]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

v. The combination of Martin and Muehl does not teach storing information on individual parts of the components making up the turbine engine. However, storing more data or detailed information on individual parts of a larger component would have been obvious to one of ordinary skill in the art at the time of the invention. The combination of Martin and Muehl identify that storing information on the components is beneficial to track the components and store maintenance and repair histories. The same reasoning also applies to why it would have been desirable for one of ordinary skill in the art at the time of the invention to modify the system to include more detailed information on the part level, rather than just the component. In part, advances in technology, such as the development of smart cards and RFID tags have made the storage of data easier, while the capacity of such devices has increased greatly. These

advances, along with the obvious desire to store information regarding maintenance and repairs, would have been obvious to one of ordinary skill in the art at the time of the invention. Katayanagi teaches a general method for managing life cycles of replaceable products that reflects both the advances in technology and the requisite desire to store individual part information associated with components (see generally, column 10, lines 17-52). It would have been obvious to one of ordinary skill in the art, at the time of invention, to store information on individual parts of the components making up the turbine engine in the system taught by the combination, as more detailed information is both desirable and made easier by advances in technology, as evidenced in an example by Katayanagi.

w. Per claim 25, Martin teaches periodically storing the data (column 2, lines 10-15).

x. Per claim 26, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).

y. Per claim 27, Martin teaches a method for electronically recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including providing at least one information storage device permanently deployed on at least one individual component (64, figure 1), storing identification information of at least one life limited part of the engine component (30-35, figure 1), providing at least one data register having data storage capabilities for life limited parts and referencing each data register with stored

identification information of at least one life limited part and a parameter (column 8, lines 17-21), and retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]) and that the data register is upgradeable (page 4-5, [0049]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

z. The combination of Martin and Muehl does not teach storing information on individual parts of the components making up the turbine engine. However, storing more data or detailed information on individual parts of a larger component would have been obvious to one of ordinary skill in the art at the time of the invention. The

combination of Martin and Muehl identify that storing information on the components is beneficial to track the components and store maintenance and repair histories. The same reasoning also applies to why it would have been desirable for one of ordinary skill in the art at the time of the invention to modify the system to include more detailed information on the part level, rather than just the component. In part, advances in technology, such as the development of smart cards and RFID tags have made the storage of data easier, while the capacity of such devices has increased greatly. These advances, along with the obvious desire to store information regarding maintenance and repairs, would have been obvious to one of ordinary skill in the art at the time of the invention. Katayanagi teaches a general method for managing life cycles of replaceable products that reflects both the advances in technology and the requisite desire to store individual part information associated with components (see generally, column 10, lines 17-52). It would have been obvious to one of ordinary skill in the art, at the time of invention, to store information on individual parts of the components making up the turbine engine in the system taught by the combination, as more detailed information is both desirable and made easier by advances in technology, as evidenced in an example by Katayanagi.

aa. Per claim 28, Martin teaches periodically storing the data (column 2, lines 10-15).

bb. Per claim 29, Martin teaches storing information over the life of the component (column 8, lines 17-21).

3. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Martin, Muehl, and Katayanagi in view of Vogan et al. (US005968107A).

a. Per claims 11 and 18, the combination teaches the invention as explained in the rejection of claims 1 and 10. The combination does not teach predicting future maintenance requirements from the data. In the field of diagnostic and maintenance data gathering, parameter trending of engine or other components is commonly known and used. One such system is disclosed by Vogan. Vogan teaches using the stored data from a component to predict the future maintenance requirements of that component before a failure occurs, in order to minimize downtime or repair time of the component (column 1, lines 57-67). It would have been obvious to one of ordinary skill in the art, at the time of invention, to use the stored parameter information in the system of the combination to predict future maintenance requirements, as component trending is well known and practiced in the art, as evidenced by Vogan.

Allowable Subject Matter

4. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. Per claim 13, the prior art does not teach or reasonably suggest in combination the apparatus for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine

engines, including that maintenance activity must be recorded in the information storage device when maintenance is done for the engine to operate as claimed.

Response to Arguments

5. The Examiner has read and considered the Applicant's arguments filed 11/28/2005. However, the Examiner is not persuaded that storing data on a more detailed level is sufficiently non-obvious as to be patentable. More specifically, the combination of Martin and Muehl already identify that storing information on the components is beneficial to track the components and store maintenance and repair histories. The same reasoning also applies to why it would have been desirable for one of ordinary skill in the art at the time of the invention to modify the system to include more detailed information on the part level, rather than just the component. In part, advances in technology, such as the development of smart cards and RFID tags have made the storage of data easier, while the capacity of such devices has increased greatly. These advances, along with the obvious desire to store information regarding maintenance and repairs, would have been obvious to one of ordinary skill in the art at the time of the invention. Katayanagi teaches a general method for managing life cycles of replaceable products that reflects both the advances in technology and the requisite desire to store individual part information associated with components (see generally, column 10, lines 17-52). It would have been obvious to one of ordinary skill in the art, at the time of invention, to store information on individual parts of the components making up the turbine engine in the system taught by the combination, as

more detailed information is both desirable and made easier by advances in technology, as evidenced in an example by Katayanagi.

6. Additionally, the Examiner has considered the Applicant's arguments concerning the teaching of the Vogon reference. The Examiner is citing the Vogon reference for teaching engine parameter trending, which has applicability to the field of turbine engines, as they are in fact a type of engine and accrue the same benefits from parameter trending. The classification of the Vogon reference is in fact under the same classification as the present patent application. Both fall into sub-classifications that are under 701/99 – With indication or control of power plant (e.g. performance).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Gibson whose telephone number is (571) 272-6960. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG

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